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A Social-Cognitive Perspective of Terrorism Risk Perception and Individual Response in Canada

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The volume of research on terrorism has increased since the events of September 11, 2001. However, efforts to develop a contextualized model incorporating cognitive, social-contextual, and affective factors as predictors of individual responses to this threat have been limited. Therefore, the aim of this study was to evaluate a series of hypotheses drawn from such a model that was generated from a series of interviews with members of the Canadian public. Data of a national survey on perceived chemical, biological, radiological, nuclear, and explosives (CBRNE) terrorism threat and preparedness were analyzed. Results demonstrated that worry and behavioral responses to terrorism, such as individual preparedness, information seeking, and avoidance behaviors, were each a function of cognitive and social-contextual factors. As an affective response, worry about terrorism independently contributed to the prediction of behavioral responses above and beyond cognitive and social-contextual factors, and partially mediated the relationships of some of these factors with behavioral responses. Perceived coping efficacy emerged as the cognitive factor associated with the most favorable response to terrorism. Hence, findings highlight the importance of fostering a sense of coping efficacy to the effectiveness of strategies aimed at improving individual preparedness for terrorism.

KEY WORDS: Individual preparedness; risk perception; social-cognition; terrorism; worry

1. INTRODUCTION

An abundant literature on terrorism documents its deleterious impact on psychological stress and individual behavior.[1–8] Perhaps for apparent reasons, the bulk of this research has focused on communities characterized by chronic political conflict or on the impacts of a specific disaster. Conversely, little research has explored the way terrorism threat might affect members of communities in the absence of an event. At first glance, such efforts may seem misguided. However, this information could be of use to the development of strategies aimed at preparing for terrorism, which would reflect a valuable shift from reactive to proactive emergency management.[9] Indeed, the events of September 11, 2001 signaled to nations across the globe the value of improving emergency preparedness in order to ameliorate response to terrorism. In Canada, this point was recently strengthened by the revelation that this nation was a planned target in a similar foiled attack involving two Canadian flights.[10] Understanding the way individuals perceive and respond to this threat prior to the occurrence of a specific event might shed light on approaches to take in order to promote preparedness and foster resilience among individuals and

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communities. In an effort to elucidate the mechanisms involved in individual response to the threat of terrorism in Canada, the aim of this study was therefore to develop and evaluate a social-cognitive model of individual response to terrorism, generated from both theory and results of a previous qualitative study.

1.1. Theoretical Context

While few models to date have been developed to account for individual response to terrorism, much can be learned about potentially relevant processes from the literature on risk and emergency management. For instance, current theory in this area identifies a wide range of psychosocial determinants of individuals' responses to hazards, including sociodemographic, cognitive, and affective factors.[11] While these factors have mainly been discussed in relation to their role in public outrage or controversy surrounding hazards, some approaches emphasize their potential value in fostering individuals' involvement in hazard preparedness.[12–15] Accordingly, cognitive factors, such as the extent to which individuals perceive a particular hazard as a likely and serious threat to health, as well as the extent to which they perceive themselves as able to control or cope with it, are recognized as key determinants of protective or preventative behavior in several models of health behavior.[16–18] Some models acknowledge the additional contribution of the social context to engagement in preventative behavior, for example, though the establishment of social norms for such behavior (e.g., theory of reasoned action, theory of planned behavior).[19,20]

In line with this approach, Paton *et al.*[15] developed, based on findings of both qualitative and quantitative studies, a social-cognitive model of disaster preparedness to specify the factors that motivate people to prepare for earthquakes. In this model, motivation to prepare is considered to be a function of individuals' cognitive and affective reactions to earthquakes, including their risk perception, hazard awareness, and anxiety. When individuals are sufficiently motivated, intentions to prepare are formed on the basis of their outcome expectancies and self-efficacy. Finally, whether these intentions translate to action depends on a number of additional social-contextual factors, including whether individuals transfer responsibility for preparedness onto others, whether they have a strong sense of community, whether they trust the sources from which they receive information, and whether they perceive hazard activity to be infrequent. By specifying key predictors of preparedness, Paton's model thus has the potential to inform risk communication and the promotion of earthquake preparedness. However, it remains unclear whether this specific model may apply to a wider range of disasters such as acts terrorism. Indeed, there are important differences to consider between natural disasters and disasters like terrorism.

Previously, Quarantelli[21] distinguished conflict-type disasters (e.g., collective acts of terror) from consensus-type disasters (e.g., natural and technological disasters), defining the former as deliberate attempts of one or more parties to inflict damage onto one another, and the latter as relatively sudden events within a fairly definable location of impact. Peek and Sutton[22] more recently underlined how acts of terror, such as those of September 11, 2001, have common elements with both consensus- and conflict-type disasters. However, they also emphasized how such disasters can exceed the normal realm of consensus and conflict events due to their longer-term effects on order and security, and in terms of the speed, breadth, and profundity of organizational changes that may ensue.[22] Moreover, it has been noted that "terrorist attacks differ from disasters in the prominence of terror as the agent of disease and disruption" (p. 3 in Reference 23). Not surprisingly, large-scale reviews of the literature have shown that victims of mass violence suffer more severe trauma-induced psychological disorders (e.g., posttraumatic stress disorder (PTSD), depression, anxiety) compared to victims of natural or technological disasters.[24] Notwithstanding the importance of these differences, it is perhaps more important to consider what is unique about responses to terrorism as a threat prior to the occurrence of an attack, rather than reactions to an attack.

Research has pointed to a number of psychological processes of particular relevance to individuals' responses to the threat of terrorism. For instance, Sunstein[25] argued that, through a phenomenon known as *probability neglect*, individuals' responses to fear-provoking threats such as terrorism are a function of their perceptions of the disastrous consequences of an attack rather than their perceptions of the chances that one will occur. Steering away from a purely cognitive perspective of individual response to terrorism, Slovic and Weber[26] described responses to extreme events such as terrorist attacks as arising from the interplay between two

systems. More specifically, factors that affect the degree of likelihood and seriousness of terrorism are evaluated using a cognitive system, referred to as the analytic system. However, affect-laden images of terrorism, as well as associations that have personal meaning, are evaluated using an affective system, referred to as the experiential system. These cognitive and affective systems are believed to function in parallel and in interaction. However, due to the highly emotionally charged nature of terrorism, individuals' responses to such threats are thought to be most heavily weighted by evaluations made using the experiential system.

Increasingly, there is evidence that both cognitive and affective factors play a role in individual response to terrorism. For instance, studies have shown that one's perceived likelihood of a terrorist attack is predictive of several types of responses, including travel decisions, changes in daily routines to avoid places perceived to be of high risk, and individual preparedness.[27–29] Similarly, affective responses to terrorism—namely, concern and worry—have been found to be associated with changes in travel plans and limiting activities or time spent in places perceived to be of high risk.[30] Unfortunately, cognitive and affective factors have rarely been examined simultaneously as predictors of such responses in the same study. One exceptional study of willingness to fly following the attacks of September 11, 2001, however, demonstrated that the negative association between the perceived likelihood of terrorism and willingness to fly was no longer significant when the contribution of worry was accounted for. Thus, results pointed to worry as the most powerful predictor of this type of response when both cognitive and affective factors were considered.[31]

Naturally, such results give rise to questions about the processes linking cognitive and affective factors to individual response to terrorism. Related to this issue is an ongoing debate about the mechanisms underlying the relationship between cognitive and affective factors in the perception of risk. From a first perspective, *processing theories* stipulate that affect influences cognitive evaluations of the threat through the use of an "affect heuristic."[11,32] In accordance, Lerner and her colleagues[33] found in one study that providing individuals with information designed to alter the way they felt about terrorism systematically influenced their evaluations of the probability of occurrence of terrorism-related events. From a second perspective, *appraisal theories* recognize the inherently threatening nature of some hazards, and suggest that affect arises from cognitive evaluations of the threat. In a five-month longitudinal study comparing both perspectives, Kobbeltved and her colleagues[32] found greater support for the impact of cognitive evaluations onto worry than the reverse. This study focused on military sailors' cognitive evaluations of the risk and security of a military operation rather than terrorism. Military operations are nevertheless somewhat analogous to terrorism in terms of their potential classification as extreme examples of conflict-type events.

No matter which perspective is taken, the bulk of the evidence suggests a relationship between cognitive and affective factors, as well as the basis of certain individual responses to terrorism in these factors. However, it is less clear how social-contextual factors, such as those included in Paton *et al.*'s social-cognitive model of disaster preparedness, might also be involved in the processes characterizing individual response to terrorism. Some insight was provided by results of a previous study involving a qualitative analysis of transcripts of interviews with individuals from across Canada in which concerns and decisions surrounding terrorism-related risk were discussed.[34] [3]

1.2. Previous Qualitative Study Findings

In this previous qualitative study, the discussion of affective responses primarily centered on worry or concern arising from the threat of terrorism. First and foremost, results suggested that individuals' affective responses to this threat were shaped by cognitive factors, such as their perceptions regarding the levels of threat, uncertainty, and control that terrorism involves. However, results emphasized the importance of understanding the social context within which such responses occur: several individuals discussed their affective responses to terrorism in relation to their opinions regarding the manner in which the threat is regulated by authorities. There appeared to be some consensus in the expression of greater concern about terrorism as a function of more negative views regarding its regulation.

In addition to affective responses, various behavioral responses to terrorism were discussed (i.e., decisions or changes made in response to the threat). Examples of more favorable responses included individual preparedness behaviors and efforts to

[3] Results of this analysis are only briefly outlined here, as they have been reported elsewhere in greater detail.[34]

resolve negative emotions that arise from the threat, while unfavorable responses entailed avoidance behaviors. Such responses included the avoidance of certain activities, places, or people out of fear of experiencing an attack. In general, these responses were considered unfavorable because there was a sense that engaging in them was detrimental to quality of life.

Like affective responses, behavioral responses appeared to stem from individuals' cognitive evaluations of terrorism. In addition, these were motivated by concerns or worries about terrorism. All behavioral responses were motivated by the degree to which terrorism was perceived as posing a high level of threat and as a source of concern. The nature of the relationship between perceived control and response appeared to be more complex, however: while a sense of personal control seemed to be connected to engagement in individual preparedness behaviors, avoidance behaviors seemed to be regarded as reflecting a loss of power or control over one's life.

Finally, there was an apparent connection between social-contextual factors, such as respondents' views on the regulation of terrorism and behavioral responses. However, it was less clear how these factors shaped behavioral responses. From a "social norm" perspective, it could be expected that individuals would be most likely to adopt behavioral responses that correspond with their views of actions taken by authorities to regulate terrorism. On the other hand, through a diffusion of responsibility onto others, greater satisfaction with authorities' regulation of terrorism could serve as a basis for the failure to take any personal preparedness measures. Paton's[15] social-cognitive model of disaster preparedness accounts for phenomena similar to either of these hypotheses through its inclusion of trust in information sources as a determinant of individual preparedness and identification of one's tendency to transfer responsibility for preparedness to others as a barrier to individual preparedness.

1.3. Proposed Social-Cognitive Model

In order to summarize the processes observed in the previous qualitative study,[34] a social-cognitive model of individual response to terrorism was generated and later refined in accordance with research on terrorism, as shown in Fig. 1. In broad terms, the model posits that affective responses, such as worry about terrorism, are a function of cognitive evaluations of this threat as well as social-contextual factors. Reflecting the manner in which respondents discussed these themes in the previous qualitative study,[34] the model depicts pathways from cognitive and social-contextual factors toward affective responses. With regard to the relationship between cognitive factors and affective responses, both process and appraisal theories discussed above provide plausible and empirically supported perspectives. However, it was ultimately decided to base the model on Kobbeltved *et al.*'s[32] observations, as their study evaluated both perspectives and favored a link from cognitive evaluations to affect. Finally, these same cognitive and social-contextual factors, along with affective response were connected to behavioral responses to terrorism. As such, the model depicts these factors as having both direct and indirect pathways, with affective responses mediating their relationship with behavioral responses.

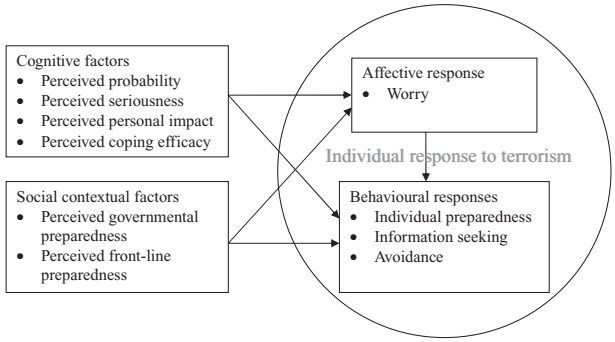

Fig. 1. Model specifying relationships between cognitive factors, social-contextual factors, affective response, and behavioral responses to terrorism.

1.4. Study Objectives and Hypotheses

As a next step, a primary objective of this study, was to evaluate the model in a more representative sample of Canadians using data collected as part of national survey on perceived chemical, biological, radiological, nuclear, and explosives (CBRNE) terrorism threat and preparedness.[35] Perceptions of terrorism on the dimensions of probability, seriousness, personal impact, and coping efficacy were examined as specific cognitive factors, while perceptions of institutional preparedness for terrorism were examined as social-contextual factors. Worry about terrorism was included as an affective response, and individual preparedness, information seeking, and avoidance were included as behavioral responses to this threat.

Based on the model and in line with previous findings and theory,[34,36] it was hypothesized that:

(i) Perceptions of terrorism as more threatening (i.e., as more probable, more serious, as having a greater personal impact) would be associated with greater worry about terrorism.
(ii) The perception of oneself as better able to control or cope with terrorism (e.g., higher perceived coping efficacy) would be associated with lesser worry about terrorism.
(iii) More favorable perceptions of institutional preparedness for terrorism would be associated with lesser worry about terrorism.
(iv) Perceptions of terrorism as more threatening would be associated with increased engagement in both favorable and unfavorable behavioral responses.
(v) The perception of oneself as better able to control or cope with terrorism, on the other hand, would be associated with greater engagement in favorable behavioral responses (e.g., individual preparedness and information seeking) and lesser engagement in unfavorable behavioral responses (e.g., avoidance).
(vi) However, no specific hypotheses were developed about the relationship of perceptions of institutional preparedness for terrorism with behavioral responses to terrorism, given that this is a relatively unexplored area of research.
(vii) Also, greater worry about terrorism would be associated with increased engagement in both unfavorable and favorable responses to terrorism.

Finally, given that worry about terrorism was expected to be associated with cognitive factors as well as behavioral responses, and that worry has at times been regarded as a special state of the cognitive system that may potentiate response to danger,[37] a secondary aim was to determine whether this affective response mediates, in part, the relationships of cognitive and social-contextual factors with various behavioral responses to terrorism.

2. METHOD

2.1. Participants

A sample of 1,502 Canadians of at least 18 years of age took part in the survey (731 men and 771 women). The sample was stratified by region (Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick; Quebec; Ontario; Prairies: Manitoba and Saskatchewan; Alberta; and British Columbia) as well as age group (18–34 years, 35–54 years, and 55 years or over) and sex within region according to 2001 Census data.

2.2. Measures

Development of the survey questionnaire was based on general findings of the previous interviews, as well as a national survey on health risk perception.[38,39] It was also based on a pilot questionnaire-based study on psychosocial aspects of CBRNE terrorism,[40–42] and a series of group interviews that were held in the fall of 2004 with individuals from across Canada.[43]

The questionnaire was originally developed in English. However, in order to ensure its possible administration in both official languages of Canada, it was translated into French by a professional translator whose mother tongue was French. Efforts were made to ensure equivalency across English and French versions of the questionnaire in order to reduce potential cultural interpretive biases resulting from its administration in both languages: English and French-translated questionnaires were verified by two fluently bilingual content experts, and no significant issues were identified.

2.2.1. Cognitive Factors

Based on results of a factor analysis,[4] perceptions of terrorism were assessed on four cognitive factors. *Perceived probability* was assessed by summing over respondents' ratings of their perceived likelihood and perceived uncertainty regarding five different terrorist events ("How likely do you think it is that [chemical, biological, radiological, nuclear, or explosives terrorism] will occur in Canada?" and "How uncertain do you feel currently about possible [chemical, biological, radiological, nuclear, or explosives terrorism] in Canada?" respectively). This scale demonstrated good internal consistency, yielding a Cronbach's alpha of 0.91.

Perceived seriousness, perceived personal impact, and *perceived coping efficacy* were each assessed

[4] Exploratory and confirmatory factor analyses were carried out on the data to inform the development of scales used to assess cognitive factors, social-contextual factors, and behavioral responses to terrorism. A description and discussion of specific results of these analyses is beyond the scope of this article. However, details on results of these analyses may be obtained by contacting the first author.

by summing over respondents' ratings of their perceived seriousness, perceived personal impact, and perceived coping efficacy regarding these events, respectively ("How serious do you think it would be if [chemical, biological, radiological, nuclear, or explosives terrorism] did occur in Canada?" "If [chemical, biological, radiological, nuclear, or explosives terrorism] occurred in Canada, to what extent do you think it would have an impact on your life?" and "If [chemical, biological, radiological, nuclear, or explosives terrorism] occurred in Canada, how well do you think you would be able to cope with it?" respectively). Ratings on these three cognitive factors, as well as on perceived probability, were provided using a 5-point Likert-type scale (1 = not at all, 5 = extremely). These last three scales also demonstrated good internal consistency, yielding Cronbach's alphas of 0.83, 0.87, and 0.89, respectively.

2.2.2. *Social-Contextual Factors*

As a social-contextual index, the survey assessed Canadians' perceptions of the level of preparedness of different institutions. Respondents were presented a list of various institutions involved in emergency preparedness and were asked to rate the extent to which they perceived each to be prepared for terrorism ("How much do you think they are prepared for terrorism?"). Institutions included: (i) the federal government, (ii) the provincial government, (iii) the municipal government, (iv) hospital and health care services, (v) first responders, (vi) nongovernmental organizations, and (vii) local community organizations. All ratings were provided using a 5-point Likert-type scale (1 = not at all, 5 = extremely). Respondents were provided with examples of first responders, nongovernmental organizations, and local community organizations to better guide their ratings. For first responders, respondents were given the examples of the police, paramedics, and fire department; for nongovernmental organizations, they were given the examples of the Red Cross, St-John Ambulance, and the Salvation Army; and for local community organizations, they were given the examples of community clubs and churches.

Also based on results of a factor analysis, an index of *perceived governmental preparedness* was computed by summing over respondents' ratings of governmental institutions (federal government, provincial government, and municipal government), while an index of *perceived front-line preparedness* was computed by summing over respondents' ratings of institutions that play more of a front-line role in emergency preparedness (first responders, hospital and health care services, nongovernmental organizations, and local community organizations). The scales each demonstrated adequate internal consistency (Cronbach's alphas of 0.81 and 0.77, respectively).

2.2.3. *Affective Response to Terrorism*

As an index of affect, worry about terrorism in general was assessed with one question at the beginning of the survey ("To what extent do you currently worry about terrorism in Canada?"). Ratings were provided using a 5-point Likert-type scale (1 = not at all, 5 = extremely).

2.2.4. *Behavioral Response to Terrorism*

Individual behavioral responses to the threat of terrorism were assessed with the question: "How much have you actually done the following?" This was followed by a list of 13 behaviors, ranging from individual preparedness to avoidance behaviors, to be rated on a 5-point Likert-type scale (1 = not at all, 5 = extremely). Specific behaviors were either drawn from a list provided in a RAND publication about individual preparedness for CBRNE terrorism[44] or were selected because they were mentioned by respondents in previous group interviews.[38,43] While this list may not have included every possible behavior that individuals could adopt in response to terrorism, it was believed to reflect preparedness behaviors of greatest importance and widest applicability, as well as behaviors that appeared to be common among Canadians in response to this threat.[43]

Since a high proportion of respondents (close to 50% or higher) responded to this question with a rating of 1 (not at all) for most of the 13 behaviors, these variables were dichotomized: ratings of 1 were assigned a value of 0 (not at all) and ratings between 2 and 5 were assigned a value of 1 (at least a little).

In accordance with results of a factor analysis,[4] the number of *individual preparedness behaviors* in which each respondent had engaged was assessed by summing over dichotomized ratings for consulting others for preparedness advice, establishing an emergency plan, putting together an emergency supply kit, receiving emergency first aid or cardiopulmonary resuscitation (CPR) training, obtaining information about potential shelters in the community, establishing a meeting area or method of contact with

loved ones, learning about evacuation plans of buildings occupied frequently, and seeking social support. The number of *information seeking behaviors* was assessed by summing over dichotomized ratings for learning about differences and similarities between different types of terrorism, and reading up on the topic of terrorism. Last, the number of *avoidance behaviors* was assessed by summing over dichotomized ratings for avoiding public places, refraining from watching the news to avoid coverage on terrorism issues, and being nervous around certain people. Results of this particular factor analysis are presented elsewhere.[45] The scale used to assess individual preparedness behaviors demonstrated adequate internal consistency (Kuder-Richardson Formula 20 (KR-20) coefficient of 0.76), although this was not the case for scales used to assess information seeking and avoidance behaviors (KR-20 coefficients of 0.56 and 0.40, respectively). Still, it should be noted that the appropriateness of evaluating the internal consistency of indices that reflect a count remains a question of debate.

2.2.5. Demographic Variables

Age, education, sex, and household income were assessed. Age was assessed using the categories of 1 = 18–24 years, 2 = 25–34 years, 3 = 35–44 years, 4 = 45–54 years, 5 = 55–64 years, and 6 = 65 years and above. Education was assessed using the categories of 1 = some/completed elementary school, 2 = some/completed high school, 3 = some/completed community college (or CEGEP in Quebec), 4 = some/completed university, and 5 = some/completed graduate school. Last, household income was assessed using the categories of 1 = less than $19,999, 2 = $20,000 to $29,999, 3 = $30,000 to $39,999, 4 = $40,000 to $49,999, 5 = $50,000 to $59,999, 6 = $60,000 to $69,999, 7 = $70,000 to $79,999, and 8 = $80,000 or over.

2.3. Procedure

The survey was administered via telephone interviews between November 15 and December 15, 2004. Data were collected using computer-assisted telephone interviewing (CATI). Potential respondents were identified by way of random digit dialing, stratified as indicated above. Once a household was contacted, the adult whose birthday was closest to the day of the call was selected for the interview. Of the total 28,648 phone numbers dialed, 4,910 were not valid, 8,284 were unanswered, 12,039 resulted in a refusal, 1,483 required a call-back, and 430 were addressed to individuals with demographic characteristics of quotas already met. Completed interviews represented 9.7% of valid answered calls.

During administration of the survey, lists of items within sections were sequenced randomly to balance for possible order effects. If respondents did not know what to answer or if they had no opinion regarding a specific item, they were given the opportunity to select "don't know/no opinion" as a response (coded as 0). Interviews lasted approximately 35 minutes and were conducted in the respondent's official language of preference. In total, 1,159 respondents completed the survey in English and 343 completed it in French.

2.4. Data Analyses

Survey weights were used throughout analyses so that the sample would be representative of the Canadian population. Design effects due to the stratified sampling procedure were examined in a random subsample of variables, and were found to be close to 1 (ranging from 0.99 to 1.00), indicating that analysis of the data using simple random sample variances would be adequate.

Bivariate correlations were computed to examine relationships between demographic variables, cognitive factors (perceived probability, perceived seriousness, perceived personal impact, and perceived coping efficacy), social-contextual factors (perceived governmental preparedness, perceived front-line preparedness), affective response (worry), and behavioral responses to terrorism (individual preparedness, information seeking, and avoidance behaviors). Effects of demographic variables found to be significantly associated with behavioral responses were controlled in further analyses.

While structural equation modeling is a preferred alternative to regression analyses for testing mediation, the current data set was not appropriate for this particular analysis due to the fact that some concepts (i.e., affective response to terrorism) were assessed with a single item (i.e., worry). Mediation was therefore evaluated through a series of multiple regression analyses according to specifications of Baron and Kenny.[46] Only cases with complete data on model variables were included in the analyses in order to ensure that regression coefficients of each analysis would reflect precisely the same sample. Using a Mahalanobis criterion of $p < 0.001$, some

multivariate outliers were identified and removed from the sample. Data from the remaining 1,100 cases (representing 72.3% of the full sample) were subjected to a series of multiple linear regression analyses. A p-value of 0.05 was used as the criterion for all tests of significance.

3. RESULTS

Bivariate correlations among all variables of interest are presented in Table I. Since both sex and education were most strongly associated with worry and the behavioral responses to terrorism, these variables were included as covariates in analyses predicting responses to terrorism.

3.1. Predictors of Worry About Terrorism—Hypotheses i–iii

A sequential linear multiple regression analysis was carried out, with sex and education entered in a first step, cognitive factors entered in a second step, and social-contextual factors entered in a final step as predictors of worry. As shown in Table II, it was found that cognitive and social-contextual factors significantly predicted sex- and education-adjusted worry about terrorism; adjusted $R^2 = 0.41$, $F(8,1091) = 95.98$, $p < 0.001$. Forty-one percent of the variance in worry was accounted for by this model. This relationship was largely attributable to the cognitive factors, with all of them emerging as significant unique predictors of sex- and education-adjusted worry about terrorism. More specifically, sex- and education-adjusted worry about terrorism was positively associated with perceived probability ($\beta = 0.56$, $t = 21.67$, $p < 0.001$) and perceived personal impact ($\beta = 0.19$, $t = 5.75$, $p < 0.001$), while it was negatively associated with perceived seriousness ($\beta = -0.11$, $t = -3.41$, $p < 0.001$) and perceived coping efficacy ($\beta = -0.05$, $t = -2.20$, $p < 0.05$).

3.2. Predictors of Behavioral Responses to Terrorism—Hypotheses iv–vi

The model used to predict worry about terrorism above was also used to predict individual preparedness, information seeking, and avoidance behaviors as behavioral responses to terrorism. The model was found to significantly predict all of these behaviors, although the proportion of explained variance was much lower than it was for worry (ranging from 6% to 9%).

Table I. Intercorrelations Between Demographic, Cognitive, Social-Contextual, Affective, and Behavioral Response Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	–	−0.09***	0.05	−0.11***	0.02	0.02	−0.10***	−0.08**	<−0.01	−0.01	0.05	−0.03	−0.05	−0.02
2. Education		–	0.03	0.35***	−0.16***	−0.08**	−0.08**	0.08**	−0.05	−0.10***	−0.18***	0.01	0.16***	−0.05
3. Sex			–	−0.10***	0.15***	0.17***	0.21***	−0.11***	0.09***	0.08**	0.12***	<−0.01	−0.13***	0.09***
4. Income				–	−0.07*	−0.03	−0.02	0.07*	−0.07**	−0.10***	−0.10***	0.02	0.07**	−0.03
5. PP					–	0.35***	0.33***	−0.06	0.06*	0.12***	0.59***	0.26***	0.14***	0.27***
6. PS						–	0.65***	−0.01	0.02	0.08**	0.22***	0.08**	0.04	0.12***
7. PPI							–	−0.06*	0.06*	0.10***	0.33***	0.11***	0.07**	0.16***
8. PCE								–	0.07**	0.08**	−0.10***	0.07*	0.13***	−0.02
9. PGP									–	0.58***	0.11***	0.12***	0.04	0.02
10. PFP										–	0.14***	0.15***	0.02	0.08**
11. Worry											–	0.24***	0.17***	0.28***
12. IPB												–	0.43***	0.38***
13. ISB													–	0.14***
14. AB														–

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Note: PP = perceived probability; PS = perceived seriousness; PPI = perceived personal impact; PCE = perceived coping efficacy; PGP = perceived governmental preparedness; PFP = perceived front-line preparedness; IPB = individual preparedness behavior; ISB = information seeking behavior; AB = avoidance behavior.

Table II. Demographic, Cognitive, and Social-Contextual Variables as Predictors of Worry About Terrorism

Predictor	*B*	*SEB*	β	Adjusted R^2
Step 1				
Sex	0.28	0.06	0.14***	
Education	−0.22	0.03	−0.22***	0.07***
Step 2				
Sex	0.05	0.05	0.02	
Education	−0.09	0.02	−0.09***	
Perceived probability	0.08	< 0.01	0.56***	
Perceived seriousness	−0.03	0.01	−0.11**	
Perceived personal impact	0.04	0.01	0.19***	
Perceived coping efficacy	−0.01	0.01	−0.04	0.40***
Step 3				
Sex	0.04	0.05	0.02	
Education	−0.09	0.02	−0.09***	
Perceived probability	0.07	<0.01	0.56***	
Perceived seriousness	−0.03	0.01	−0.11***	
Perceived personal impact	0.04	0.01	0.19***	
Perceived coping efficacy	−0.01	0.01	−0.05*	
Perceived governmental preparedness	0.02	0.01	0.04	
Perceived front-line preparedness	0.02	0.01	0.05	0.41***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Note: $\Delta R^2 = 0.34$ for Step 2 ($p < 0.001$); $\Delta R^2 = 0.01$ for Step 3 ($p < 0.01$).

3.2.1. Individual Preparedness Behavior

As shown in Table III, cognitive and social-contextual factors significantly predicted sex- and education-adjusted individual preparedness behavior; adjusted $R^2 = 0.09$, $F(8,1091) = 15.25$, $p < 0.001$. This relationship was largely attributable to perceived probability ($\beta = 0.25$, $t = 7.98$, $p < 0.001$), perceived coping efficacy ($\beta = 0.06$, $t = 2.15$, $p < 0.05$), and perceived front-line preparedness ($\beta = 0.15$, $t = 4.06$, $p < 0.001$), which emerged as significant unique predictors.

3.2.2. Information Seeking Behavior

Cognitive and social-contextual factors also significantly predicted sex- and education-adjusted information seeking behavior, as shown in Table IV; adjusted $R^2 = 0.06$, $F(8,1091) = 9.98$, $p < 0.001$. Here, all four of the cognitive factors emerged as significant unique predictors. Sex- and education-adjusted information seeking was positively associated with perceived probability ($\beta = 0.16$, $t = 4.88$, $p < 0.001$), perceived personal impact ($\beta = 0.08$, $t = 1.93$, $p = 0.05$), and coping efficacy ($\beta = 0.10$, $t = 3.43$, $p < 0.001$), while it was negatively associated with perceived seriousness ($\beta = -0.08$, $t = -2.05$, $p < 0.05$).

Table III. Demographic, Cognitive, Affective, and Social-Contextual Variables as Predictors of Individual Preparedness Behavior

Predictor	*B*	*SEB*	β	Adjusted R^2
Step 1				
Sex	0.07	0.13	0.02	
Education	<−0.01	0.06	<−0.01	<−0.01
Step 2				
Sex	−0.08	0.13	−0.02	
Education	0.10	0.06	0.05	
Perceived probability	0.07	0.01	0.27***	
Perceived seriousness	−0.03	0.02	−0.06	
Perceived personal impact	0.03	0.02	0.06	
Perceived coping efficacy	0.03	0.01	0.08**	0.07***
Step 3				
Sex	−0.14	0.12	−0.03	
Education	0.12	0.06	0.06*	
Perceived probability	0.07	0.01	0.25***	
Perceived seriousness	−0.03	0.02	−0.06	
Perceived personal impact	0.03	0.02	0.06	
Perceived coping efficacy	0.03	0.01	0.06*	
Perceived governmental preparedness	0.02	0.03	0.03	
Perceived front-line preparedness	0.10	0.02	0.15***	0.09***
Step 4				
Sex	−0.15	0.12	−0.04	
Education	0.14	0.06	0.07*	
Perceived probability	0.05	0.01	0.19***	
Perceived seriousness	−0.03	0.02	−0.05	
Perceived personal impact	0.02	0.02	0.04	
Perceived coping efficacy	0.03	0.01	0.07*	
Perceived governmental preparedness	0.02	0.03	0.03	
Perceived front-line preparedness	0.09	0.02	0.14***	
Worry	0.24	0.08	0.12***	0.10***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Note: $\Delta R^2 = 0.07$ for Step 2 ($p < 0.001$); $\Delta R^2 = 0.03$ for Step 3 ($p < 0.001$); $\Delta R^2 = 0.01$ for Step 4 ($p < 0.001$).

3.2.3. Avoidance Behavior

Last, cognitive and social-contextual factors significantly predicted sex- and education-adjusted avoidance behavior; adjusted $R^2 = 0.08$, $F(8,1091) = 12.25$, $p < 0.001$. However, as shown in Table V, only perceived probability ($\beta = 0.25$, $t = 7.64$, $p < 0.001$), perceived personal impact ($\beta = 0.09$, $t = 2.10$, $p < 0.05$), and perceived front-line preparedness ($\beta = 0.09$, $t = 2.35$, $p < 0.05$) emerged as significant unique predictors.

Table IV. Demographic, Cognitive, Affective, and Social-Contextual Variables as Predictors of Information Seeking Behavior

Predictor	*B*	*SEB*	β	Adjusted R^2
Step 1				
Sex	−0.15	0.05	−0.09**	
Education	0.10	0.02	0.12***	0.02***
Step 2				
Sex	−0.18	0.05	−0.11***	
Education	0.12	0.02	0.15***	
Perceived probability	0.01	<0.01	0.16***	
Perceived seriousness	−0.02	0.01	−0.08*	
Perceived personal impact	0.01	0.01	0.08*	
Perceived coping efficacy	0.02	0.01	0.11***	0.06***
Step 3				
Sex	−0.19	0.05	−0.12***	
Education	0.12	0.02	0.15***	
Perceived probability	0.01	<0.01	0.16***	
Perceived seriousness	−0.02	0.01	−0.08*	
Perceived personal impact	0.01	0.01	0.08*	
Perceived coping efficacy	0.02	0.01	0.10***	
Perceived governmental preparedness	0.02	0.01	0.01	
Perceived front-line preparedness	0.01	0.01	0.03	0.06***
Step 4				
Sex	−0.19	0.05	−0.12***	
Education	0.13	0.02	0.17***	
Perceived probability	0.01	<0.01	0.08*	
Perceived seriousness	−0.01	0.01	−0.07	
Perceived personal impact	0.01	0.01	0.05	
Perceived coping efficacy	0.02	0.01	0.11***	
Perceived governmental preparedness	0.02	0.01	0.05	
Perceived front-line preparedness	0.01	0.01	0.03	
Worry	0.11	0.03	0.14***	0.07***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Note: $\Delta R^2 = 0.04$ for Step 2 ($p < 0.001$); $\Delta R^2 = 0.01$ for Step 3 ($p < 0.05$); $\Delta R^2 = 0.01$ for Step 4 ($p < 0.001$).

Table V. Demographic, Cognitive, Affective, and Social-Contextual Variables as Predictors of Avoidance Behavior

Predictor	*B*	*SEB*	β	Adjusted R^2
Step 1				
Sex	0.17	0.05	0.10***	
Education	−0.03	0.03	−0.04	0.01***
Step 2				
Sex	0.09	0.05	0.05	
Education	0.01	0.03	0.02	
Perceived probability	0.03	<0.01	0.25***	
Perceived seriousness	−0.01	0.01	−0.05	
Perceived personal impact	0.02	0.01	0.08*	
Perceived coping efficacy	<−0.01	0.01	−0.01	0.07***
Step 3				
Sex	0.08	0.05	0.05	
Education	0.02	0.03	0.02	
Perceived probability	0.03	<0.01	0.25***	
Perceived seriousness	<−0.01	0.01	−0.06	
Perceived personal impact	0.02	0.01	0.09*	
Perceived coping efficacy	<−0.01	0.01	−0.01	
Perceived governmental preparedness	−0.02	0.01	0.05	
Perceived front-line preparedness	0.02	0.01	0.09*	0.08***
Step 4				
Sex	0.08	0.05	0.05	
Education	0.03	0.03	0.04	
Perceived probability	0.02	<0.01	0.16***	
Perceived seriousness	−0.01	0.01	−0.04	
Perceived personal impact	0.01	0.01	0.06	
Perceived coping efficacy	<−0.01	0.01	−0.01	
Perceived governmental preparedness	−0.02	0.01	−0.05	
Perceived front-line preparedness	0.02	0.01	0.08*	
Worry	0.12	0.03	0.15***	0.09***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Note: $\Delta R^2 = 0.07$ for Step 2 ($p < 0.001$); $\Delta R^2 < 0.01$ for Step 3 (p = n.s.); $\Delta R^2 = 0.01$ for Step 4 ($p < 0.001$).

3.3. Hypothesis vii and Mediation

Since previous research suggests that individuals' behavioral responses to terrorism may also be a function of the extent to which they worry about terrorism, the potential role of worry as a mediator of the relationships of cognitive and social-contextual factors with behavioral responses to terrorism was examined in a final series of analyses.

First, a multiple linear regression analysis using data from this sample revealed that cognitive and social-contextual factors significantly predicted worry about terrorism; adjusted $R^2 = 0.40$, $F(6, 1093) = 124.29$, $p < 0.001$. As shown in Table VI, results were similar to those of the previous analysis predicting sex- and education-adjusted worry about terrorism, with the exception of the additional significant positive association of perceived front-line preparedness with worry ($\beta = 0.06, t = 2.03, p < 0.05$).

Second, a set of sequential multiple linear regression analyses revealed that worry significantly predicted sex- and education-adjusted individual preparedness behavior, adjusted $R^2 = 0.05$, $F(3,1096) = 21.95$, $p < 0.001$, with $\beta = 0.25$, $t = 8.10$, $p < 0.001$; information seeking behavior, adjusted $R^2 = 0.05$, $F(3, 1096) = 21.80$, $p < 0.001$, with $\beta = 0.19$, $t = 6.22$, $p < 0.001$; and avoidance behavior, adjusted

Table VI. Cognitive and Social-Contextual Variables as Predictors of Worry About Terrorism

Predictor	*B*	*SEB*	β	Adjusted R^2
Step 1				
Perceived probability	0.08	<0.01	0.58***	
Perceived seriousness	−0.03	0.01	−0.11***	
Perceived personal impact	.04	0.01	0.20***	
Perceived coping efficacy	−0.01	0.01	−0.05*	0.40***
Step 2				
Perceived probability	0.08	<0.01	0.57***	
Perceived seriousness	−0.03	0.01	−0.11***	
Perceived personal impact	0.04	0.01	0.20***	
Perceived coping efficacy	−.01	0.01	−0.06*	
Perceived governmental preparedness	0.02	0.01	0.04	
Perceived front-line preparedness	0.02	0.01	0.06*	0.40***

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Note: $\Delta R^2 = 0.01$ for Step 2 ($p < 0.001$).

$R^2 = 0.07$, $F(3, 1096) = 28.61$, $p < 0.001$, with $\beta = 0.26$, $t = 8.51$, $p < 0.001$.

In a next step, worry was added into the model predicting individual preparedness following the cognitive and social-contextual factors (Table III). This only led to a slight reduction in the relationships of perceived probability ($\beta = 0.19$, $t = 4.94$, $p < 0.001$) and of perceived front-line preparedness ($\beta = 0.14$, $t = 3.91$, $p < 0.001$) with sex- and education-adjusted individual preparedness behavior. These mediation effects were found to be statistically significant, as indicated by Sobel test statistics[47,48] of 7.68, $p < 0.001$ and 2.04, $p < 0.05$, respectively.

Similarly, adding worry into the model predicting information seeking behavior attenuated the relationships of perceived probability ($\beta = 0.08$, $t = 2.10$, $p < 0.05$), of perceived seriousness ($\beta = -0.07$, $t = -1.67$, $p > 0.05$), and of perceived personal impact ($\beta = 0.05$, $t = 1.29$, $p > 0.05$) with sex- and education-adjusted information seeking behavior (Table IV). According to Sobel test statistics,[47,48] worry only significantly mediated the effects of perceived probability (6.11, $p < 0.001$) and of perceived personal impact (4.34, $p < 0.001$).

Last, relationships of perceived probability ($\beta = 0.16$, $t = 4.29$, $p < 0.001$), of perceived personal impact ($\beta = 0.06$, $t = 1.42$, $p > 0.05$), and of perceived front-line preparedness ($\beta = 0.08$, $t = 2.16$, $p < 0.05$) with sex- and education-adjusted avoidance behavior were significantly reduced when worry was added to the equation, yielding Sobel test statistics[47,48] of 8.18, $p < 0.001$; 4.93, $p < 0.001$; and 2.05, $p < 0.05$, respectively (Table V).

4. DISCUSSION

The purpose of this study was to evaluate hypotheses drawn from a model integrating cognitive, social-contextual, and affective factors involved in individual response to terrorism. Worry about terrorism was related to cognitive evaluations of terrorism on various dimensions. Although to a much lesser extent, there was some evidence of a relationship between worry and social-contextual factors (i.e., perceptions of institutional preparedness). Also, behavioral response to terrorism appeared to be associated with many of the same factors as worry about terrorism. An examination of its relationship with perceptions of institutional preparedness suggested that these may play a role by establishing specific behavioral responses as a social norm. Last, further analyses revealed that worry independently contributed to the prediction of behavioral responses to terrorism above and beyond cognitive and social-contextual factors, and partially mediated the relationships of some of these factors with behavioral responses to terrorism.

4.1. Predicting Worry About Terrorism

Consistent with results of previous studies documenting a relationship between cognitive evaluations and affect in the perception of risk, all of the cognitive factors significantly predicted worry about terrorism. While relationships were relatively strong, they were not perfect, suggesting that cognitive and affective factors involved in terrorism risk perception are largely independent.[49] As expected, individuals who perceived terrorism as more probable, as having a greater personal impact, and who had a lower perceived coping efficacy were more worried about terrorism.[34] However, individuals who perceived terrorism as having more serious consequences were less worried about it. This last finding is particularly interesting, since perceived seriousness was associated with increased worry in bivariate correlations. Given the high correlation observed between perceived seriousness and perceived personal impact ($r = 0.65$), one possible interpretation is that any contribution of perceived seriousness to heightened worry above and beyond that already accounted for by perceived personal impact in the regression analysis produced diminishing returns.

More specifically, at some point, terrorism may be regarded as having such serious consequences that individuals feel there is no point in worrying about it. This interpretation may also relate to some comments made by respondents in the previous qualitative study regarding their perceived control over terrorism.[34] In particular, one woman indicated that she was not worried about terrorism, no matter how horrible it was, because there was nothing she could do about it. Possibly, heightened awareness of the seriousness of terrorism contributes to a sense of powerless over this threat, which ultimately gives rise to a tendency to respond apathetically.

Despite the fact that all cognitive factors were significantly associated with worry about terrorism, it was clear that perceived probability was the strongest predictor. In light of the fact that Canada has not experienced a recent major attack, it seems reasonable that evaluations of the likelihood and uncertainty of such an occurrence are of greatest relevance to Canadians. This finding is also reminiscent of some observations made in the disaster literature. For instance, it has been noted that states of intense fear in disaster situations are a function of (i) the perceived immediacy of danger, (ii) the perception of only a few escape routes, (iii) the perception that these are closing, and (iv) a lack of communication about the situation.[50,51] Thus, perceptions of a likely threat and uncertainty about the situation appear to be central to such reactions. While important conceptual distinctions exist between intense fear and worry, it seems reasonable that a similar set of cognitive factors were related to worry in this study. Perceptions of the likelihood and uncertainty of terrorism may thus arouse fear-related processes both prior to and following the occurrence of an event.

In line with the well-articulated idea that control-related beliefs serve a protective function,[52] these findings also revealed a tendency for those with a higher perceived coping efficacy to be less worried about terrorism in general. In previous studies, the related concept of perceived control was found to be associated with higher rather than lower worry about terrorism.[34,53] Indeed, it has been noted that perceived control may not be a positive attribute in uncontrollable situations.[54,55] Given the relative difficulty of predicting and preventing terrorist events, it can readily be understood how terrorism might be construed as one such situation. This study nevertheless demonstrates the possible benefits of perceived control over some aspects of terrorism; namely, how one may manage or cope with its consequences. As such, findings stress the importance of terrorism risk management strategies that focus on fostering coping efficacy for a potential event among individuals and communities.

Although only in bivariate correlations and the regression analysis without adjustment for sex and education, worry was associated with some social contextual factors in addition to cognitive factors, in general, perceived institutional preparedness was associated with increased worry. This finding is in contrast to observations made in the previous qualitative study.[34] While this observation may seem counterintuitive, it may relate to a greater awareness of terrorism-related concerns among respondents who perceived authorities as taking action to prepare for possible events.

4.2. Predicting Behavioral Responses to Terrorism

In addition to worry, this study examined individual preparedness, information seeking, and avoidance as behavioral responses to terrorism. Analyses revealed that many of the same factors associated with worry were associated with behavioral responses to terrorism. In further support of the longstanding view that perceived threat can motivate individuals to protect themselves,[18,56–59] perceived probability and perceived personal impact of terrorism were associated with increased engagement in most, if not all, behavioral responses. On the other hand, perceived seriousness of terrorism was associated with decreased information seeking in the regression analysis. This finding may relate to a previously noted[18] paradoxical role of perceived threat in motivating protective or preventive behavior; that is, that excessively high perceived threat may lead to the perception that one's resources to cope with the threat are exceeded, and result in apathy or avoidance-type responses.

As expected, perceived coping efficacy was associated with individual preparedness and information seeking. Again, support was found for the protective function of control-related beliefs, which foster health protective and preventative behaviors.[16,17,52,54,56,60,61] Taken with the fact that perceived coping efficacy was not significantly associated with avoidance behavior, the potential utility of interventions aimed at fostering such beliefs is further emphasized. More specifically, these findings suggest that raising individuals' awareness about their ability to manage the consequences of possible attacks may reduce worry about terrorism, as well as encourage

individual preparedness and information seeking behavior. What is more, doing so is not likely to result in undesired avoidance behavior.

Although to a lesser extent than cognitive factors, social-contextual factors were also associated with some behavioral responses to terrorism. More specifically, a higher perceived level of front-line preparedness significantly predicted increased engagement in individual preparedness and avoidance behaviors. Reminiscent of some health behavior theories (e.g., theory of reasoned action, theory of planned behavior[19,20]), perceived institutional preparedness may play a role similar to that of social norms by fostering greater individual action. Similarly, Tierney[62] noted that "sustained hazard reduction efforts are not likely to occur without the involvement of organized interests that act as 'champions' or 'advocates', (i.e., scientists, public officials, grass-roots citizens' advocacy groups)" (p. 17 in Reference 62). By comparison, a basis for the positive relationship between perceived front-line preparedness and avoidance is less clear. A number of mechanisms could explain this relationship. For instance, awareness of actions taken by front-line workers to prepare for terrorism might lead individuals to believe that an attack is more likely. In turn, this may heighten worry about the occurrence of an attack and encourage any behavioral means to cope with this worry. Alternatively, this may directly trigger attempts to control the occurrence of terrorism by avoiding places perceived as potential targets. While either explanation is possible, exploration of this issue was beyond the scope of this study. Additional research on avoidance behavior is needed to better understand the mechanisms involved in such responses.

Finally, adding worry into the equations predicting behavioral responses to terrorism significantly improved the prediction of each type of response, suggesting that worry contributed independently from cognitive and social-contextual factors to these responses. However, findings also provided evidence that worry partially mediated the relationships of some cognitive and social-contextual factors with such responses. Evidence was strongest for partial mediation of the relationships of perceived probability and perceived front-line preparedness with individual preparedness behavior. However, the cross-sectional nature of the study design limits the potential to make solid conclusions regarding the mediating role of worry in these relationships, as well as the directionality of any of the relationships examined. As noted by Weinstein and Nicholich,[63] a major difficulty with correlational research on the association between risk perception and behavior relates to the reciprocal nature of their relationship: as much as perceived risk can determine the extent to which one will take precautions over a hazard, the extent to which one has already taken precautions can also determine the level of risk perceived to be associated with the hazard. Cross-sectional designs make it difficult to disentangle these different processes, and oftentimes result in the attenuation of observed relationships.[63]

4.3. Limitations and Future Directions

While results provide support for many of the hypotheses outlined, some additional methodological considerations must be acknowledged. First, although nonresponse is common in telephone surveys of longer length,[64,65] the low response rate of this study raises questions about the generalizability of findings to the overall Canadian population. The sample was stratified to resemble the Canadian population in terms of region, as well as age and sex within region based on 2001 Census data, yet respondents tended to have a slightly higher level of education and income than the general population. The sample nevertheless included Canadians from a wide range of sociodemographic backgrounds, providing clues about the nature of social-cognitive factors involved in terrorism risk perception and individual response across Canada. Also, administration of the survey in both official languages ensured that results would capture the viewpoints of both French and English Canada.[5]

A second limitation entails the self-report nature of the data, as it raises concerns about reporting biases as well as common method variance. Although self-report measures of health behavior are generally regarded as providing valid and reliable information, their reliability can be impacted by random recall error (i.e., nonsystematic mistakes in recalling past behaviors[66]). Measures affected by random recall error are less precise, and also have the potential to attenuate the magnitude of observed relationships. As a result, the use of self-report measures might

[5] One downturn of this aspect of the methodology is that it may have given rise to issues with linguistic and/or cultural equivalence across French and English versions of the survey. However, preliminary analyses of the survey revealed little cause for concern in this regard.

also have contributed to the fact that a large proportion of variance in behavioral responses to terrorism remained unexplained. Nevertheless, predicting behavior remains a challenge.[67–69] Particularly in the context of individual preparedness, a number of additional factors can act as barriers to taking action, including the community resources individuals have at hand to help them prepare for an emergency, or their level of trust in various information sources.[15,70] This study only examined a subset of predictors of behavioral response to terrorism and does not preclude the possible contribution of other unmeasured factors.

4.4. Conclusion

Notwithstanding these limitations, this study represents an important step in understanding and modeling the factors involved in individual response to terrorism. Basis of the questionnaire in qualitative research represents a great strength of the survey itself, as it ensured that the tool included questions to assess a more comprehensive set of issues of relevance to individual response to terrorism in the Canadian context. Previously, Brenot and his colleagues[71] urged for the application of qualitative methods to gain deeper insight into contextual factors that shape the meaning individuals assign to risk issues.[72] Since the social-cognitive model examined in this study was also generated from qualitative work,[34] it might therefore be argued that the model was more reflective of the contextual nature of processes involved in individual response to terrorism. It was encouraging to find support for some elements of the model in this analysis, but results also point to important areas on which to expand in future research. For instance, future longitudinal research may help to better understand the dynamic relationships between cognitive, affective, and social-contextual predictors of behavioral response to terrorism. Moreover, including a greater number of affective variables in future research would allow for an evaluation of the model with more sophisticated multivariate techniques, such as structural equation modeling.

Finally, social-cognitive models of individual response to terrorism are of value to the development of risk management strategies not only by shedding light onto psychological or behavioral issues that might ensue in the face of a crisis, but also in terms of their potential to inform the design of programs aimed at improving individual response to terrorist attacks. This study took a further step through its elaboration and evaluation of a social-cognitive model that can inform programs aimed at improving preparedness for terrorism. In particular, findings suggest that campaigns aimed at raising awareness about the threat of terrorism could help encourage individual preparedness and planning. However, they also underline the possible undesirable effects of these campaigns on worry and avoidance behaviors. Similarly, results draw attention to the potentially counterproductive effects of overemphasizing the threatening nature of terrorism as an approach to motivate information seeking about potential scenarios. Strategies emphasizing what individuals can do to most effectively cope with a potential event may prove to be an effective means to temper such reactions, and promote resilience. Future work might also consider a collective sense of mastery in view of fostering community resilience as a whole.

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